Leica PHOTOGRAPHY

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Leica PHOTOGRAPHY

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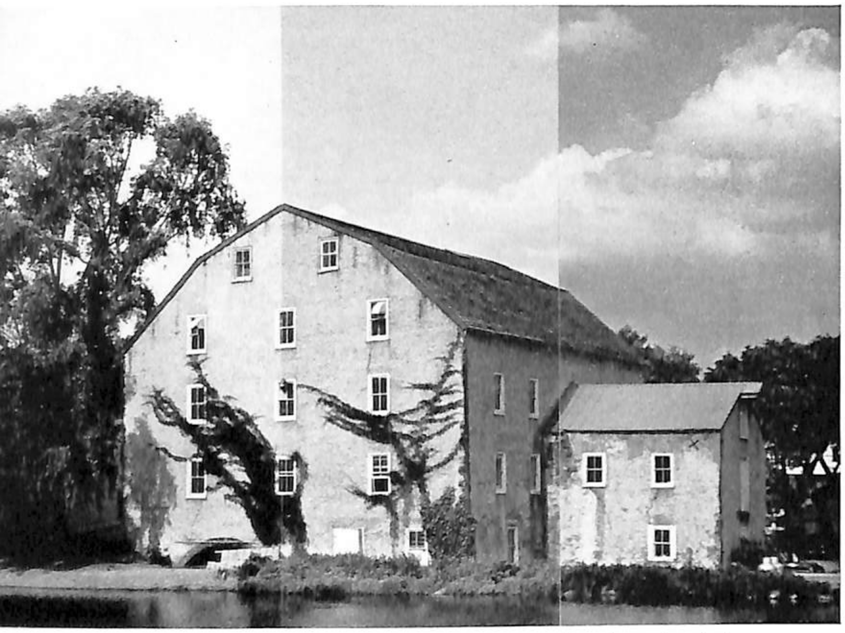
HOW TO USE FILTERS



DRAMATIZING LANDSCAPES. Note how sky darkens progressively as we go from no filter to yellow I to orange. Red filter would render sky nearly black. However yellow filter lightens foliage while orange darkens it somewhat. Green filter would darken sky, lighten foliage. Building is neutral tone.

They Can Make Your Good Shots Outstanding

Norman Rothschild | New York, N. Y.

Calling a filter "A piece of colored glass used in front of a lens to bring out clouds" isn't wrong . . . but it tells far from the whole story.

Filters have many other uses. They are valuable tools, and can help you with your creative efforts.

How Filters Work

Essentially, a filter transmits, or passes, its own color of light, while absorbing other colors. The amount of each color transmitted or absorbed will, of course, depend on the depth and purity of color in the filter you are using.

Photographically speaking, colors that are absorbed by the filter are darkened in the finished picture; those that are transmitted come out lighter.

Filter	Darkens	Lightens
Yellow	Blue	Red, Green, Yellow
Orange	Blue, Green	Red, Yellow, Orange
Blue	Yellow, Red, Green	Blue
Green	Red, Blue	Green

For example, a yellow filter absorbs blue light and transmits yellow, red and green. Consequently, when you use a yellow filter, blue sky is darkened, while objects such as green trees and red barns are lightened.

(A word of caution here: The exact color of Leitz filters is determined by spectroscopic test. Never depend on the visual appearance of a filter to tell you if it is suitable for your use. Thus, many yellow filters pass a considerable amount of blue and U.V. Even though such a filter may look the same color as a Leitz filter, results would be disappointing.)

Leitz filters can be divided into three general groupings: those for black-and-white photography, those for color, and the polarizing filters useful in both fields.

Correction Or Selective Filters

Selective, or correction filters as they are also called, are used to make the various colors in the scene come out as "natural looking" tones of grey in the finished picture.

Most modern panchromatic films, while highly sensitive to red and green, have their chief sensitivity in the blue region. This makes blues come out too light, while reds, greens and yellows, are rendered too dark when no filter is used. In an outdoor scene, a blue sky, for example, would be rendered too light without a filter, while objects such as red barns and green trees, would appear too dark.

For outdoor photography, a Leitz Yellow Filter No. 1 gives correct color rendition in daylight.

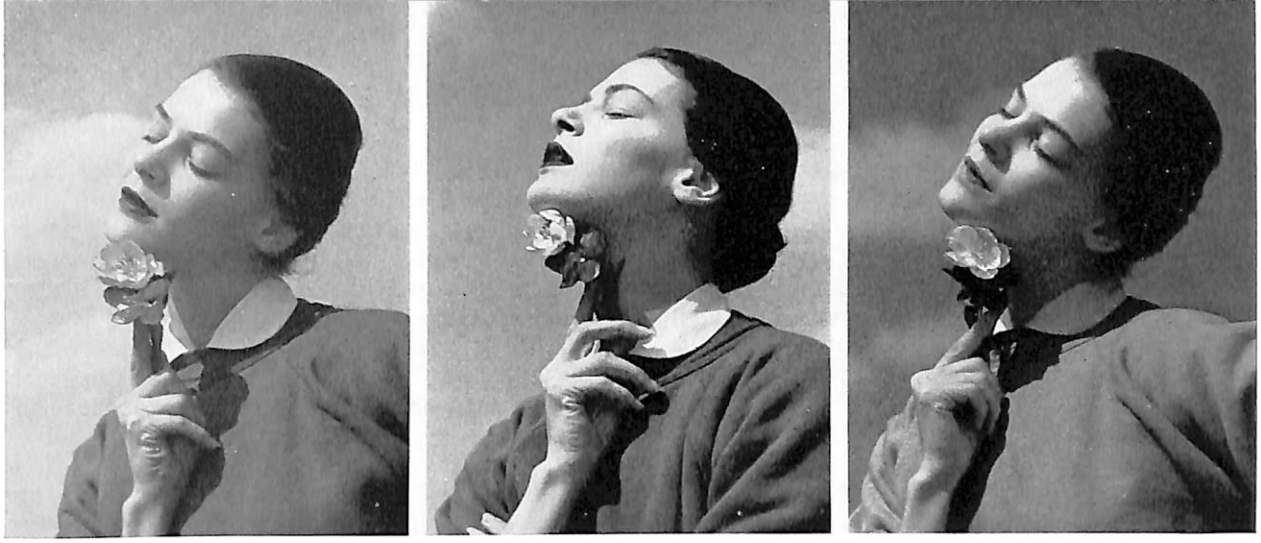
The light Leitz Yellow Filter No. 0 is useful when some correction is desired, but exposures must be kept short, as in sports and action photography.

Tungsten light, such as the photofloods used for indoor portraits, has an excess of red light. Therefore, the Leitz Green Filter is recommended for correct color rendition here. This not only holds back blue, but some of the red rays as well. It is especially valuable for portraits of men, helping to prevent waxy skin tones.

In outdoor photography, many workers prefer the green filter to a yellow one. In addition to darkening a blue sky, this filter lightens and gives added detail to green foliage and holds detail in skin tones. It also preserves the delicate tone separations of the golden hues of a sunset.

Contrast Filters

Contrast filters are used to exaggerate the difference in tonal value between colors. Objects of widely different hue, but of the same intensity, often photograph too close to each other in tone.



CHANGING TONES. Model in red sweater holds a yellow and a blue flower. With no filter, sweater and blue flower are close in tone, sky is too light. Green filter darkens lips, sweater, sky and flower, holds skin tones. Orange filter dramatizes sky, blue flower, but lightens sweater and "washes out" lips.

Thus, a red rose may "disappear" in a photograph amidst green leaves of the same depth. Here a filter such as a Leitz Orange will render the rose lighter than the leaves making it stand out. (We usually think of red as a lighter or brighter color than green.)

In landscape and marine photography, orange and red contrast filters are often used to produce spectacular effects. With these, blue skies are rendered very dark (almost black with deep filters). White clouds stand out strongly; trees and shadows are rendered very dark.

Texture in cross-lit architectural subjects may be emphasized by the use of an orange or red contrast filter. Here the filter holds back the blue skylight reflected from the shadows, making them come out darker.

Contrast filters will be found useful in copying. Let us say you must copy a print accidentally stained with red ink. A red filter darker than the stain will eliminate it entirely in the finished photograph. Old pictures in which the image has faded to a pale yellow should be copied with a Leitz Blue Filter to restore depth and contrast. The Leitz Blue Filter is also useful in pictorial photography. It can be used to emphasize haze and fog in landscape shots. Yellow, red and orange filters cut through mild distant haze.

Filter Factors

Since filters absorb light, extra exposure must be given when one is used.

The amount of extra exposure you must give is expressed as a filter factor. Thus, a 2x filter would require your exposing twice as long (1/50th sec. instead of 1/100th) or opening one diaphragm stop (f/8 instead of f/11).

A three times factor requires opening your diaphragm $1\frac{1}{2}$ stops, four times requires 2 stops, six times requires opening up $2\frac{1}{2}$ stops, and an eight times factor requires opening up 3 stops.

LEITZ FILTERS

Daylight =	D	Yellow			Green	Orange
Tungsten =	T	0	1	2		
ADOX Films	D	1.8	2.0	2.3	3	7
	T	–	–	–	–	–
ANSCO Supreme	D	1.5	1.5	2	6	4
	T	1.5	1.5	1.5	4	3
KODAK Plus-X	D	1.5	1.5	2	3	4
	T	1.5	1.5	1.5	2.5	3
KODAK Tri-X	D	1.5	1.5	2	3	4
	T	1.5	1.5	1.5	2.5	3

An easy way to allow for filter factors is to do this at the time you are taking an exposure reading with your meter. Simply divide the film Exposure Index by the filter factor. Thus, if you are using Adox KB-17 film with an Exposure Index of 32 with a Leitz Green Filter whose factor is 3, then the index you would set on your meter is 10 ($32/3 = 10\frac{2}{3}$).

These filter factors are suitable for use with average subject matter and for normal light conditions. But, keep in mind that factors are affected by the color of the light and by the color of the subject.

Thus, if you are using a Leitz Orange Filter at sunset time when the light is orange, to photograph a red house the filter factor might be quite close to zero. The answer is obvious. Since the light and the color of the house are freely transmitted by the filter, and there is very little or no blue light to absorb, no increase of exposure would be needed. On the other hand, if you are shooting a green object by the light of the blue sky in the open shade, the factor of an orange filter, which will now be absorbing more light than it would under warmer (or redder) sunlight, might go well over the normal factor.

In unusual situations, make several exposures other than the normal one, in order to get the best possible effect.

Filters And U.V.

Ultraviolet rays (U.V.) are present in daylight and in some other common light sources. They are invisible to normal eyesight, but are readily "seen" by photographic film.

Water vapor in distant scenes scatters U.V. If you use no filter to photograph scenes of this type, the scattered U.V. rays will blot out detail.

Red, orange, and yellow filters absorb U.V. The red and orange filters do this more efficiently than do yellow filters. When these filters are used with panchromatic films, detail in distant scenery will be improved.

The Leitz U.V. Protection filter, while not as efficient as red, orange or yellow filters in the absorption of U.V., is useful where a low filter factor is needed, and when you want no change in color rendition. It is also useful at very high altitude. Here the sky is deep blue, and a yellow filter would darken it excessively.

For the greatest absorption of U.V., infrared film and Leitz Infrared filters should be used.

Infrared Filters

Leitz Infrared filters should be used with infrared film. Infrared rays, unlike ultraviolet rays, are scattered less by water vapor than are visible rays. Thus, you can use them photographically with an infrared filter and infrared film to cut through mild fog and distant haze.

Infrared rays focus differently from light rays. To insure sharp pictures, focus your Leica with the rangefinder in the usual manner. Then set the distance you have focused on, read from the scale on the lens, to the "R" mark. (See LEICA PHOTOGRAPHY, Spring 1955.)

Leitz Infrared filters are made in two densities. The Medium filter will be found most generally useful. With this filter and infrared film, the average exposure in bright sunlight will be about f/4.5 at 1/25 sec. For greater haze penetration, use the Dark Infrared filter.

Filters For Color Photography

There are several Leitz filters especially for color photography.

The Leitz Type "A" Filter is useful when you want to use Type "A" Kodachrome in daylight. It is especially helpful when you have to expose part of a roll of film to photofloods and then finish the roll outdoors.

The Leitz Photoflood Filter is for use with Daylight Type Kodachrome when this film is to be exposed to photoflood lights for indoor work.

Generally, you should reserve use of this filter for emergencies only. Its high density coupled with the relative lack of blue rays in photofloods reduces the speed of Daylight Type Kodachrome from 10 to 3.5.

(Blue-tinted flashlamps in your Ceyoo or Chico flash unit, or better still, the new Braun Hobby electronic flash unit, will give you excellent results indoors with daylight type color films without any filter.)

The Leitz Flash Filter corrects the excess blue when clear foil-filled flashlamps are used with Type "A" Kodachrome. But no filter is needed when you use Ektachrome Type "F" with foil-filled flashlamps.

The blue cast sometimes seen on daylight color film transparencies of distant landscapes, marine scenes and views taken at or from high altitude, is often caused by ultraviolet radiation. Color films "see" ultraviolet and translate it into visible blue. The Leitz Skylight Filter prevents blue overcast in your daylight color film transparencies by absorbing or blocking ultraviolet.

Pictures made in the open shade, lighted only by blue skylight, and those taken on cloudy days will be made warmer and more pleasing in color when the Leitz Skylight Filter is used. It requires no change in exposure.

Fitting Leitz Filters To Leica Lenses

If you plan to use one set of Leitz filters with more than one Leica lens, buy them to fit your 50mm. lens. Thus, if your basic lens is a 50mm. Summicron f/2, filters for it may be used with the 28mm. Hektor f/6.3, 35mm. Elmar f/3.5, 35mm. Summaron f/3.5, 50mm. Elmar f/3.5, 50mm. Hektor f/2.5, 90mm. Elmar f/4 and 135mm. Hektor f/4.5 screw-mounting lenses, by employing Leitz Filter Adapter No. 13,154 (ADSUMMI).

Summicron filters fit all bayonet-mount lenses, except the Summarit without the use of adapters.

If your basic lens is a 50mm. Summitar f/2, or 50mm. Summarit f/1.5, then Leitz Filter Adapter No. 13,079 (SOOTF) will allow these filters to be used on the above named Elmar, Hektor, and Summar lenses.

Leitz Filter Adapter No. 13,153 will let you use Summitar filters with your Summicron and with any bayonet-mounted lens, except the 50mm. Summarit f/1.5.

Leitz Telyt, 125mm. Hektor f/2.5 and 85mm. Summarex f/1.5 lenses each require separate filters.

Ed. Note: We felt that Polarizing Filters, mentioned briefly here, are interesting enough to discuss separately. An article about them will appear in a later issue of LEICA PHOTOGRAPHY.

WHAT MAKES FILTER QUALITY?

Dr. Gottfried R. Rosendahl | Technical Director, E. Leitz, Inc.

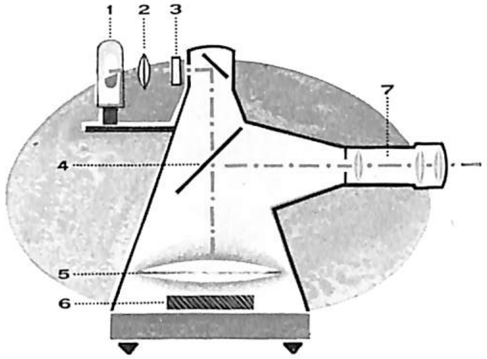


Fig. 1.
1. Spectral lamp (mercury). 2. Condenser. 3. Spectral filter (for $\lambda=5461$ A.). 4. Beam-splitting mirror. 5. Objective. 6. Filter to be examined. 7. Viewing telescope (or camera).

You have read about what filters are, and how and why we use them. Now, let's look a little further into their construction.

There are two principal types of filters:

(1) Glass filters made from glass colored in the mass.

(2) Gelatine filters, made from a thin layer of dyed gelatine. These are used either as a thin foil (plastic often substitutes for gelatine nowadays) or they are cemented between glass plates. The latter type, also called laminated filters, are usually made so that a definite amount of gelatine solution with the dye added is poured over a glass plate of a definite size — in order to obtain the desired density. After drying, the glass plates are cut into the proper sizes and coverplates are cemented to them to protect the delicate filter surface.

Gelatine Or Glass — Which?

The advantage of gelatine filters over glass filters is that any dye can be used if it is soluble in a gelatine solution or in a suitable plastic. So, a much larger variety of gelatine filters is available. This might be important for the research worker who must insist upon one well-defined spectral absorption curve for certain purposes. But, being organic compounds for the most part, the dyes in gelatine filters often fade and change color and density with time. And, since gelatine sheets alone are too delicate for use on a camera, they require two glass plates for protection and are thus thicker than mass-dyed glass filters. These glass plates, unless they are the same quality as the lens with which they are used, can affect the quality of the image on the negative. But glass plates of the same quality as lenses are difficult to produce. They are, therefore, expensive, and it is doubly difficult to produce quality laminated filters which need two glass plates the same quality as the lens.

So, you can see that although solid dyed-glass filters are more difficult to produce and more limited in their color range, that they are better from the practical photographer's point of view. It is only when we need a specific color (like those of certain color-correction filters) which cannot be produced in dyed glass, that we must turn to laminated filters.

Thus, we need high quality filters for high quality lenses in order to keep the image sharpness of the lens. Your Leica lenses, for instance, demand filters which are ground, polished, and checked the same way as the individual elements of these objectives. That means pitch polishing and quality control with either an interferometer or at least a plane test glass is a necessity. Drawn plate glass is not good enough for top-notch glass filters or filter plates. A bad filter with a large number of irregular interference fringes has often been the cause of unsatisfactory photographs.

Figure 1 shows how an interferometer for filter inspection works. It produces interference between the upper and the lower surface of the filter, which results in dark fringes. Along one fringe, the filter has the same thickness. Jumping from one fringe to the next means a change of filter thickness of half a wavelength, i.e., about ¼ micron or 0.00001 inch. Figure 2 shows interferometer patterns of a bad, a good, and an excellent filter.

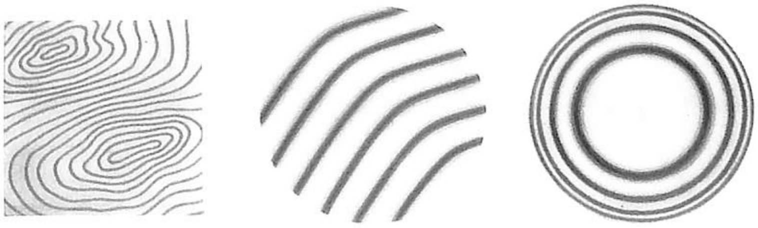
You can see that gelatine filters with twin glass plates need double care if they are to show the same optical performance as glass filters. In addition, cementing must be done very carefully to maintain high optical quality.

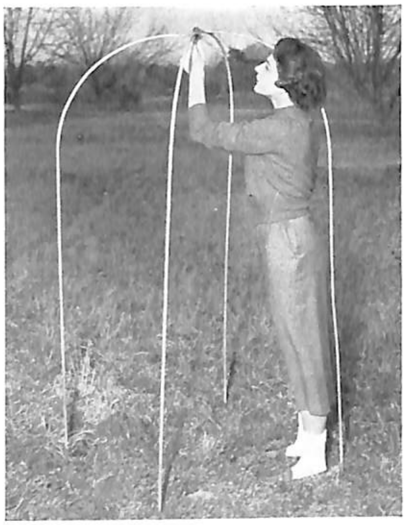
If the cementing is not done very carefully, the plano-parallelity of the filter unit is disturbed by the irregularities of the cementing layer.

The influence of a small wedge, provided it is made up of plane surfaces, could be disregarded because it causes only a very small shift of the image. It is the irregular shape of the surfaces which produces additional aberrations, which spoil picture quality. So, filters must be mounted so that no distorting strains are introduced.

Of course, checking against spectral absorption curves (that is, color and density) means that the thickness of glass filters must be held to narrow tolerances during production to obtain uniform filters.

Fig. 2


Bad
Good
Excellent

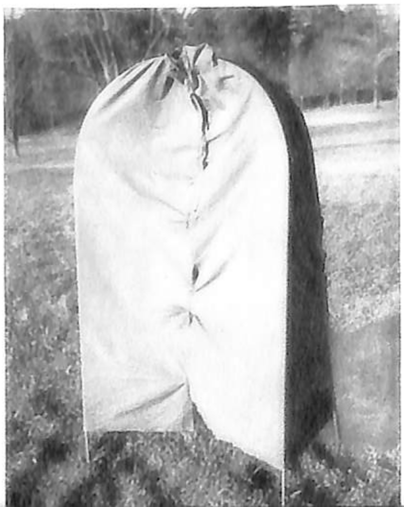


THIS SUMMER TRY BIRD PICTURES

Simple Setup Makes Top-Notch Bird Shots

Thase Daniel | El Dorado, Ark.

PORTABLE BLIND of aluminum tubing bolts together quickly; homemade "slip-cover" completes author's camouflage.



I find photographing the wild beauty of birds in color is a constant challenge to me. There is no season, for it is a year-round project.

There are three requirements for a bird photographer. Adequate equipment heads the list, but, fortunately, simple equipment *is* adequate. In my case, a Leica with two lenses plus flash equipment and an extension tube fills every need I have in bird photography. I use the 200mm. Telyt with flash unless the bird is in direct bright sunlight. And, when it's impossible to get close to the bird, I use a 400mm. and sunlight only.

I use a 15mm. extension tube with the 200mm. lens to focus closer than ten feet. I like to work from five to seven feet with small birds, for at this distance the bird's image fills the negative.

There are no set rules, but with the 200mm. lens I usually place the camera on a tripod and focus where I expect the bird to come. This can be on a nest or feeding tray. After setting my camera, I hide in a blind 30 to 50 feet away, and trip the shutter with a long cord. You can do it with an air hose and bulb which you can get from your dealer.

A Portable Blind

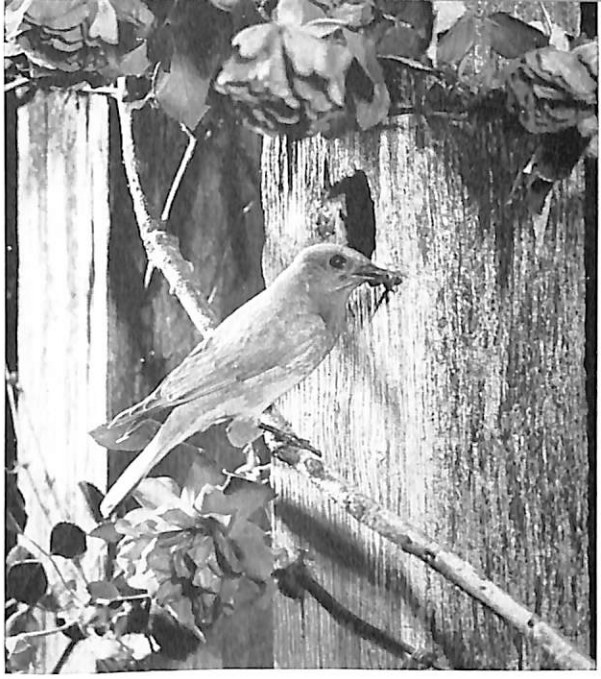
My blind is portable and light enough to carry into the woods or fields. I bent the top three feet of four lengths of ⅜ inch aluminum tubing into arcs. These are held together at the top with a removable bolt. When I arrive at the location, they make a frame tall enough for me to stand in. This I cover with a homemade drab green "pillow slip," leaving a hole just large enough to look through. I pull the remote control into the blind with me.

If I want a bird to get accustomed to the blind, I leave it on location. If it happens to rain, no harm is done; the fabric dries quickly.

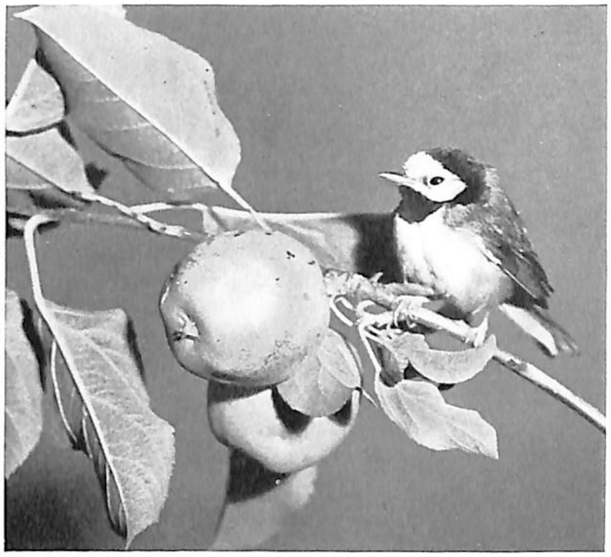
When I use a 400mm. lens, I put the tripod and camera in the blind with me, leaving a small opening for the lens. I make many shots at 35 or 40 feet with the 400mm. lens. Of course, when I'm using color film, sun is necessary; I do not use flash at this distance.

Exposure

I figure my flash exposures with the Flash Factor Chart. For instance, with Daylight Kodachrome at six feet with a #22 blue bulb I set the synchro-dial at 5, divide six feet into the guide number 44. The exposure: 1/100th at f/7. By using a five foot extension cord, I place the flash two feet from the bird, using a #26 blue bulb and shoot 1/100th at f/14. Sometimes I use 1/200th to stop action, depending on how fast the bird moves. (Electronic flash is ideal for stop-action shots—Ed.) Because telephoto lenses have a small depth of field, it is important to stop down as much as possible.



NESTS, like this Bluebird's fence-post home, are spots for good pictures. Super XX, f/14, 1/100th, Press 40 bulb, 200mm. Telyt.



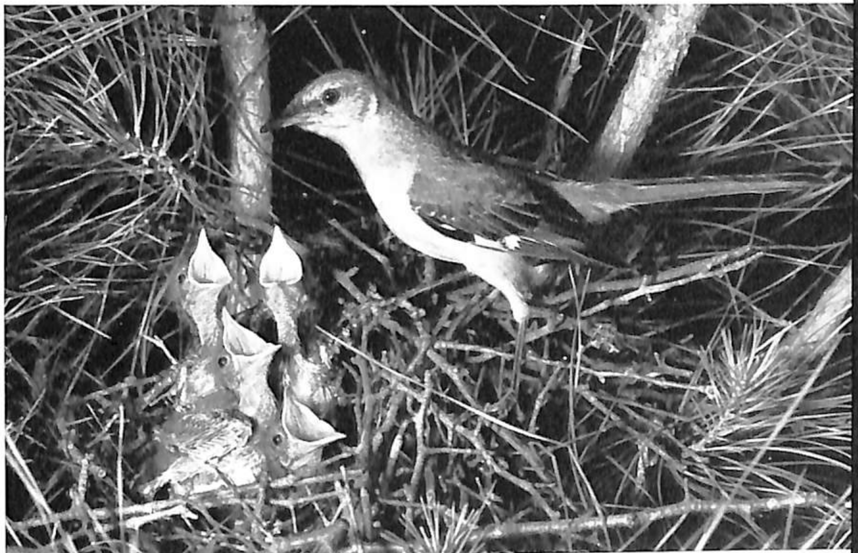
PATIENCE plus 200mm. Telyt caught a Hooded Warbler on an apple limb. Daylight Kodachrome, f/5.6 at 1/100th, #26 B bulb.

Two Other Requirements

The second requirement for good bird pictures is patience. Sometimes I wait all day to get one picture. Some days I don't get even *one*. If this happens, don't give up. Try again. Believe me, the reward you get from bringing home a perfect shot is worth every bit of the tiresome waiting.

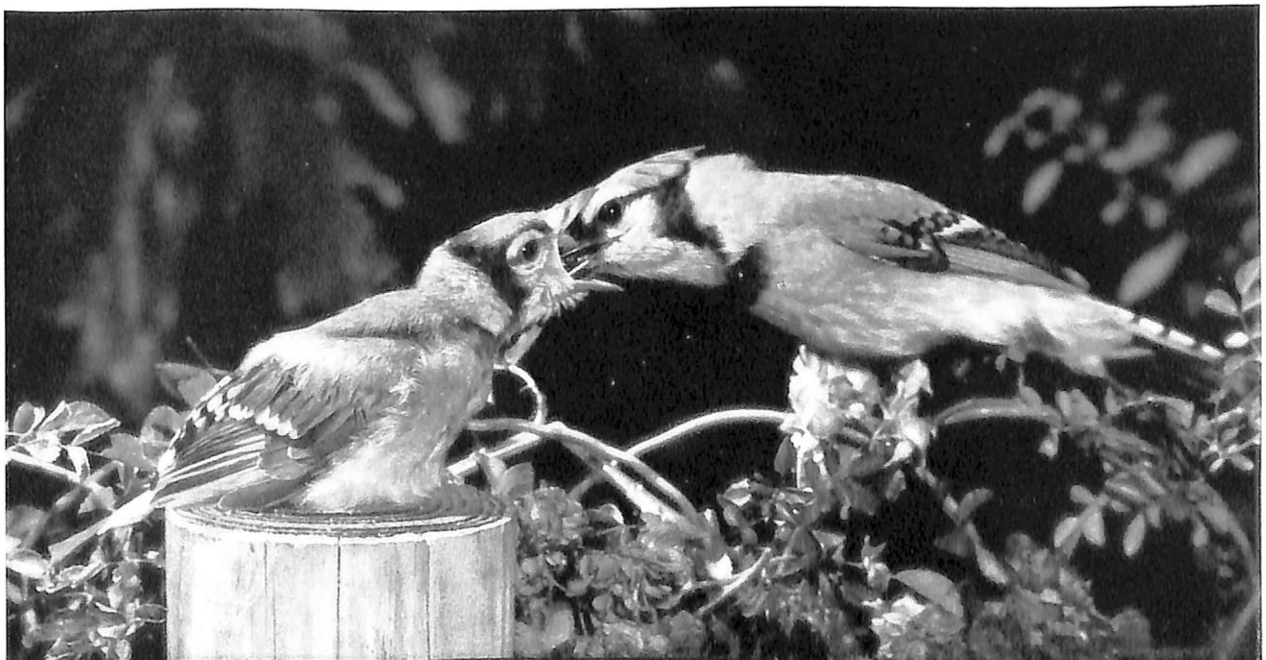
The third requirement is to know your birds and their habits. It is essential to know where to look for birds.

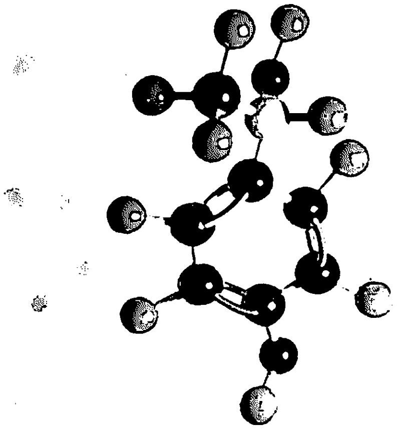
There are many bird books to be bought, and I recommend getting one. Two good ones are "Stalking Birds With Color Camera" by Arthur A. Allen, and "A Field Guide To The Birds" by Roger Tory Peterson. But you needn't have fields and woods to shoot in. City parks and suburban backyards have their share of birds. In your own yard, you can help things along by setting out feeding stations to attract them.



BINOCULARS helped time this shot of Mockingbird and nestlings. Super XX, f/14 (approx.), 1/100th, #22 B bulb, 200mm. Telyt.

REMOTE SHUTTER RELEASE caught a Jay feeding a fledgling. Daylight Kodachrome, f/5.6 at 1/100th, #26 B bulb, 200mm. Telyt.





X-22

A NEW DEVELOPER FOR ADOX FILM

Formula Is A Liquid Concentrate

Robert Richard
Chief Chemist, The FR Corp.
New York, N.Y.

When Adox thin emulsion films appeared in this country, the need for a special developer to bring out their full potential was immediately apparent. Without one, the advantage of their high resolving power (KB-14 140 lines/mm.), is lost in ordinary development.

Like most fine-grained films, Adox KB-14 is slow and tends to produce negatives of high contrast. KB-17 is better in these respects, but still somewhat difficult to handle. Development in a standard developer such as D-76 can, without caution, result in high gammas and negatives that are sometimes too hard to print on the softest paper. Contrasts can be lowered by using a low energy, fine grain developer, but since all densities are affected equally, you lose shadow detail while the highlights are being saved. In both cases the speed of the film, as measured by the fractional gradient method, is adversely affected. This means that longer exposures are necessary, irradiation is increased, and definition lowered.

What these films need is a soft working developer of high energy, which will give adequate separation in both shadows and highlights—that is, a "compensating" developer.

Compensating developers have been known for many years, and numerous formulas have been published that give excellent results. Their drawbacks lie in shortness of life and difficulty of control. Usually each development is a new experiment.

The situation is complicated by the fact that compensation is not enough. The accompanying H&D curves (Compensating Developers Chart) illustrate the effects of two developers which give the same amount of shadow detail and correspond again in the rendering of extreme highlights. In curve #1, the intermediate densities are affected linearly and gradation is excellent. In curve #2, the median tones are sharply contrasted, while the highlights tend to blend together. This does not make for high print quality. Moreover, the flattening causes a loss of definition in these areas.

Ordinary compensating developers generally consist of an organic agent of high reduction potential, such as Amidol or Catechol, in a caustic solution. On proper dilution, compensation is achieved. But the H&D curve resembles #2 unless you carry underdevelopment to the extreme. What's more, such solutions exert a softening effect upon gelatine which is especially harmful with thin emulsion films. Prolonged immersion of such films in highly alkaline developers may result in frilling.

Formulating X-22

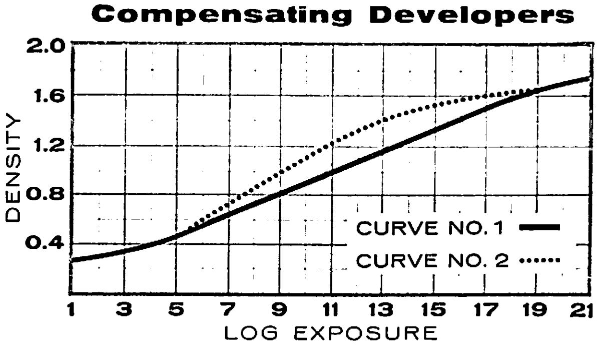
The ideal developer for these films will consistently produce results similar to curve #1, will resist oxidation sufficiently to be practical, and will allow long enough development time to assure control but not so long as to exhaust patience.

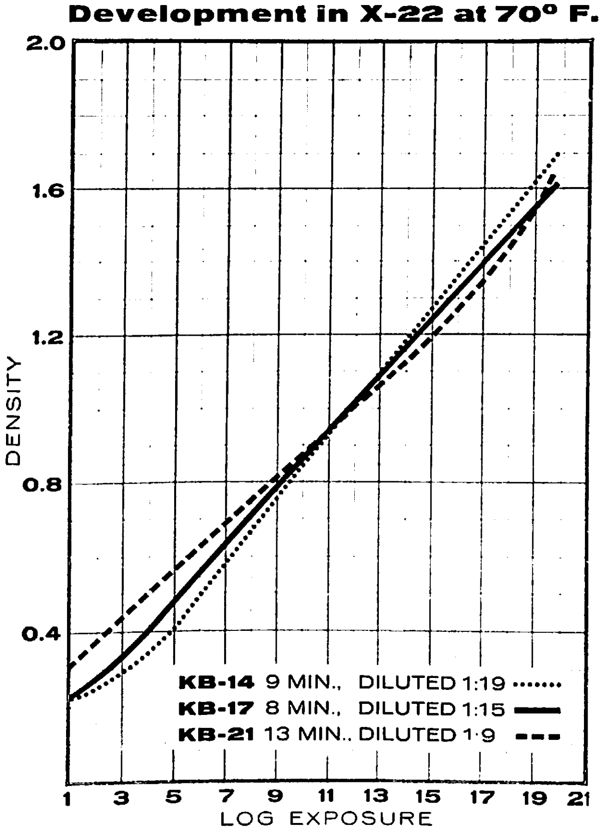
With this goal in mind, The FR Corporation went to work. The result is FR X-22 Developer, which works equally well with KB-14, KB-17, and KB-21, at suitable dilutions. Note the similarity (Development Chart) of the curves except in the toe area where the differences in speed become apparent.

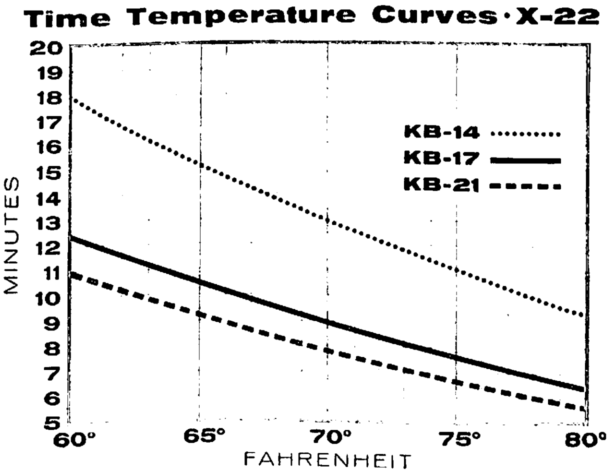
FR X-22 not only maintains gammas within usable limits, but allows an increase in speed in all three films. With it, you can expose KB-14 at an index of 25, KB-17 at 64, and KB-21 at 160! And you should take advantage of these speeds, since the lessened exposure will help definition by decreasing irradiation.

This recommendation presumes that you will expose precisely and develop carefully. For this developer-film combination sacrifices exposure latitude in the interests of definition. But latitude is a greatly overvalued commodity anyhow, and the experienced worker should not rely on it.

FR X-22 comes in one ounce packets, each sufficient to process two rolls of film. Dilution and development times are listed opposite. The critical balance of the developer is such that two rolls of film either developed together or in succession call for different times than a single roll.







Although coordinates of the charts in this article are accurate, scale has been altered for greater visual clarity.

For KB-14—Dilution 1:19

Gamma	*Developing Times (70°F.)*		
	1st roll	2nd roll	2 rolls together
0.5	9 min.	12 min.	10½ min.
0.6	11 min.	14 min.	12½ min.
0.7	13 min.	16 min.	14½ min.

For KB-17—Dilution 1:15

0.5	8 min.	10 min.	9 min.
0.6	10 min.	12 min.	11 min.
0.7	12 min.	14 min.	13 min.

For KB-21—Dilution 1:9

0.6	13 min.	16 min.	14½ min.

FOR THE ABOVE TIMES, recommended agitation is 10 seconds per minute. This allows a maximum of control. Constant agitation will allow a cut of about 25% in developing times, but it must be regular and non-uniform. Reproducibility is not attained unless the degree of turbulence remains the same throughout the entire time. Intermittent agitation, being less critical, is preferable.

The range of gammas from 0.5 to 0.7 gives you a choice depending upon subject contrast and degree of intended enlargement. Just keep in mind that huge enlargements will require low negative gammas when a condensing-diffusing enlarger is used. Even at these low gammas, the toe of the H&D curve remains short so that you can match the negative to a normal paper easily. This shortened toe also indicates that you can expose by electronic flash with only a slight increase in development.

You can use FR X-22 with any film, but unless the film has inherently fine grain, results will not be the best. Even with films like KB-14 and KB-17, you can see at 30 diameter enlargement the difference in the graininess produced by X-22 and a super fine grain developer. Such enlargements, however, are seldom intended for the family album. And from the correct viewing distance the graininess is not visible. The increase in definition given by X-22 is all-important. The solvent action of fine grain developers causes the grain structure to appear diffuse and thus lessens acutance.

But this is not a criticism of fine grain developers. With ordinary films, they give better definition than ordinary developers. After all, it's certainly easier to form an image with a handful of pepper than with a bag of marbles! Only when the film itself has incredibly fine grain can we examine and deprecate the side effects of fine grain developers.

But this does not sound the death knell of fine grain developers. Remember - no one film-developer combination will solve *all* your problems. But, if you are looking for truly remarkable resolution in your negatives, Adox and X-22 are a team that can do a remarkable job for you.

Lunch with Michel and Denis

What fun to eat outdoors!

Cooking is serious business!

A NEW LOOK FOR YOUR

Is your photo album the sort that is pulled out only when Aunt Mary comes to visit? Is it helter-skelter with all sorts of uncoordinated pictures?

So many albums start when Baby arrives. Dozens of shots go into it then. As Baby grows and grows, so does the album—but without plan. When he first walks, when he first swims, his first day at school, and so on. In other words, the haphazard high spots.

But some day when Junior has his own family, his wife will want to know what her husband was like as a child. The ordinary album gives a record, more or less. But, planned, it could tell a fascinating story—a sort of picture autobiography!

M-m-m! It was worth the trouble!

Careful! Don't burn it!

Brings Your Pictures To Life

Peter Buckley | New York, N.Y.

Use A Book Technique

A picture technique which I use is one I feel will work well for your albums. For several years I have been photographing and writing children's books about various real children all over the world. In this way, I hope to help more of our children to grow up to understand and care for the other people in our world. I have chosen photos as illustrations because I feel that they give a great sense of actuality and truth to the stories.

In shooting the pictures, I usually carry three lenses — a wide-angle, a 50mm., and either an 85mm., 90mm., or 135mm. This way I can quickly get a variety of scenes from one spot. Taking in the whole scene with the wide-angle sets the stage. Medium-distance shots with the 50mm. cover most of the action. Finally, with a long-focus lens, I can capture the important details which focus the entire story and give that feeling of having "been there" to readers of the finished story.

Remember, I am not working with my own children, and after a month's shooting in Greece I can't go back and get those shots which aren't perfect. So, I buy 100-foot rolls of film, and load my own cartridges. You needn't shoot 300 rolls a month as I often do, but you can make shooting mighty inexpensive before you start your own story-album by getting a bulk loader. The money you will save over the years can buy you another lens—or even another camera!

Plan Your Book

Now let me describe the general idea that I feel should lie behind your plan for a photo book on your child.

For instance, instead of taking a shot now and then of a particular event in your child's day, make a chapter out of this part of his life. Your job is not just to snap when the baby is in the bath, for instance, but rather to capture the story of the bath from his first babble in the play pen, all the way to his smile when he is in his crib after his bath. From this series will come the selected prints that tell the story with vitality and interest.

An actual example of what I mean is in my forthcoming book, MICHEL OF SWITZERLAND. Michel lives amongst snow-covered mountains in a deep green valley. His life, as well as the lives of everyone else in his village, is spent caring for the cows which are the major source of the community's livelihood. It was very important to show the role which cheese, made from the milk which their cows give, plays in the daily diet of these people.

Every day, Michel and his brother tend the family cows in the woods and field. Lunch is often eaten out of doors as there is not enough time to go home to the village. Almost invariably Michel fixes a "Raclet" which is very simply made. He makes a pointed stick about 3 feet long, and spearing a piece of cheese onto the end, he places it near an open fire. A few minutes later he cuts off a bubbling hot slice and puts it on thick brown bread. This and maybe an apple are Michel's and Denis's lunch.

The first thing for me to do was to show the entire area in the woods where the subsequent action would take place. For this I shot with my 35mm. Summaron. Everything was included in this picture — the woods, mountain slope, rock, boys and fire. From here on I shot within a known area. The person looking at the finished series knows now *where* the action is taking place.

Switching to my 50mm. Summicron I took a medium shot of the two boys by the rock, giving a more detailed view of the boys involved and the precise place in which they were eating. Still with my 50mm. lens I shot Michel holding the cheese near the fire. Next, came the big close-up for which I used the 90mm. Elmar. Michel's head and his hands slicing hot cheese filled my entire frame. Here we really see the person on whom the interest is centered. We see Michel, not isolated in a single portrait, but in a vital relation to an entire story in his life.

When you plan a chapter jot down all those elements beforehand which you are sure must enter the finished story and then shoot them. Also, don't forget to be constantly alert for those wonderful things which happen spontaneously. Often your greatest shots will be of just those things which you never thought of before. But you must be ready for them. One more suggestion: If you see something and wonder if it is worth a picture, SHOOT IT! The negligible expense involved is nothing compared to the great pictures you sometimes catch on such occasions.

When photographing a child, it is best to be able to snap a picture which is technically correct in a fraction of a second, without resetting speeds, apertures, or focus. This makes my favorite lens the 35mm. f/3.5 Summaron, except for the special shots mentioned previously. Even when wide open, it has excellent depth of field which practically eliminates the need to refocus as the child moves. And with the new fast films, there is no reason why you can't shoot at 1/100th and f/5.6 as a minimum except under extremely low lighting conditions. Another advantage of the wide-angle 35mm. lens is that you can photograph not only the child but his environment on the same frame with everything in focus.

Shoot Rain Or Shine

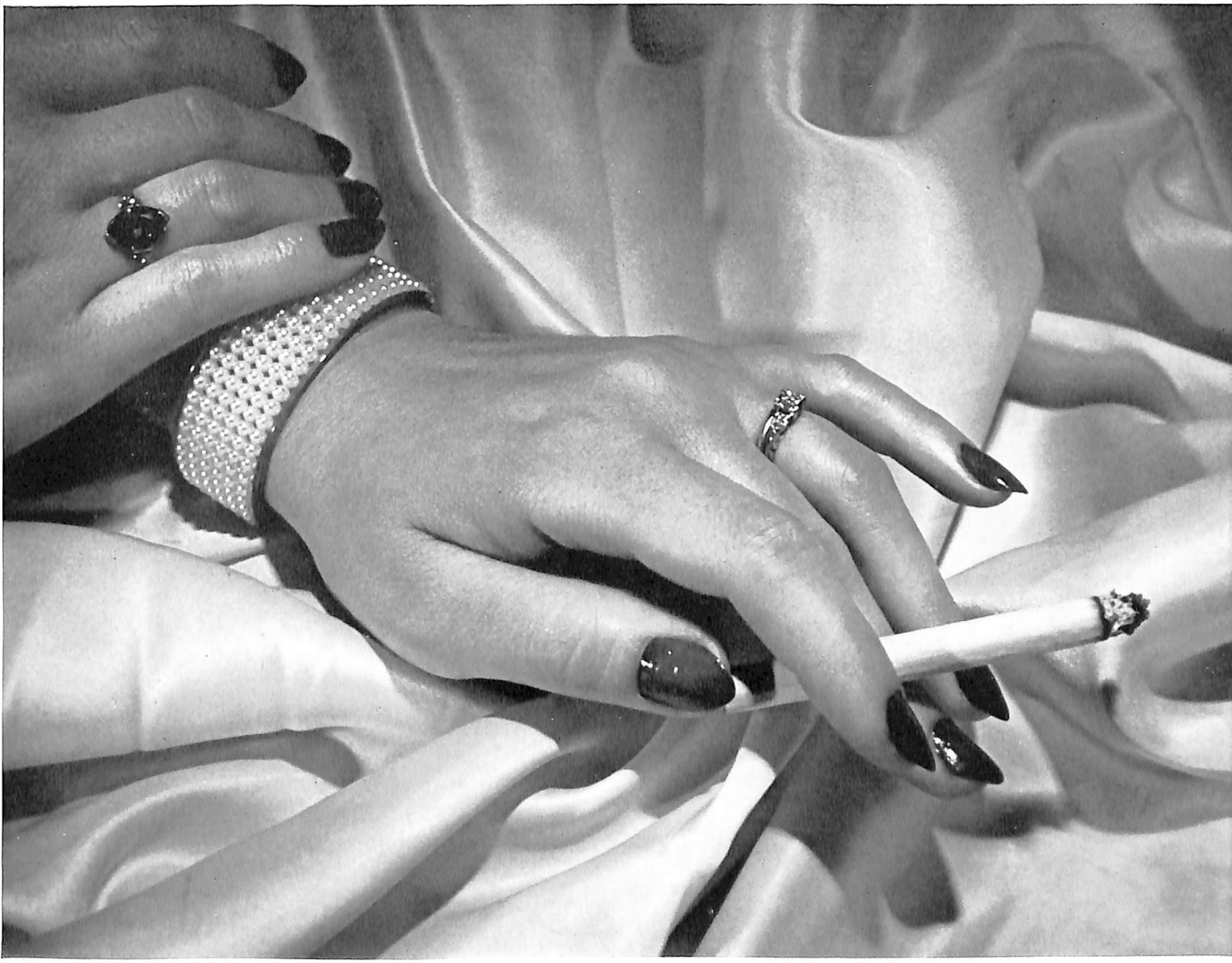
There is a time when most people put their cameras away and that is when it rains. But shooting pictures of your child while he is puddle-splashing in his new rubber boots can be fun, and safe for your camera at the same time. All you need is some stiff cardboard and some oilcloth. Cover the cardboard with the oilcloth, and make a 90° angle from two pieces. Stick one piece to the back of the camera with tape, and cut a hole in this to look through the viewfinder and rangefinder. The other piece projects over the top of the camera, and very simply protects it from all but the hardest downpour. It takes only 15 minutes to make this gadget, and it is well worth the time.

There are many ways in which you can create your own child's picture book. Above all, *I* want simplicity. No curlicue decorations, no white borders on the pictures, no black corner mounts, no superabundance of pictures, good and bad, all mixed together. For mounting, I suggest rubber cement for the cleanest, neatest results.

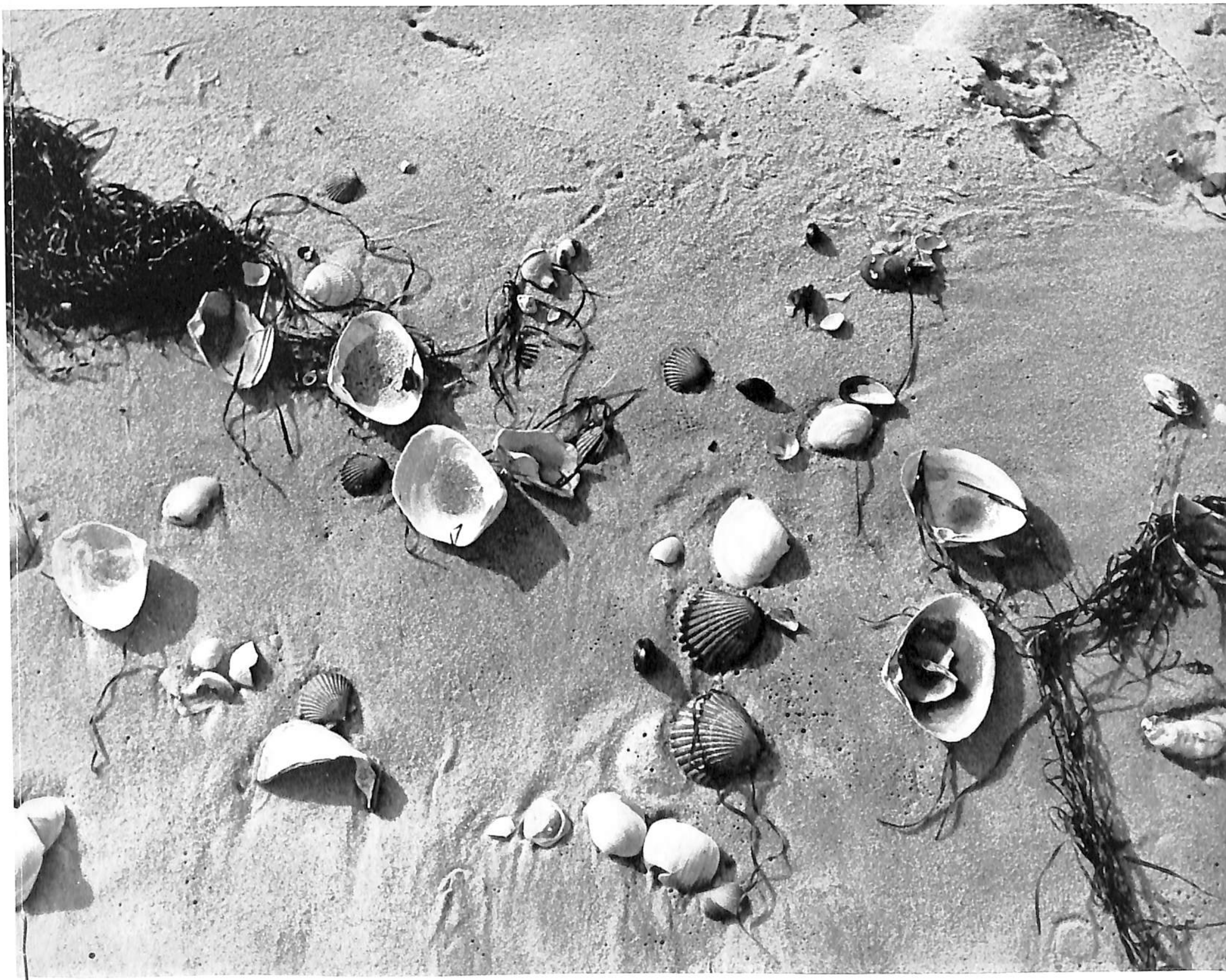
I think one good enlargement in an album is worth fifty mediocre small prints. And, it costs far less! The date and place, and a few names under the picture, are of course in order.

It takes work, and you may have disappointments, but if you plan your album, years later both you and your children will appreciate the book you have created.

SALON SECTION

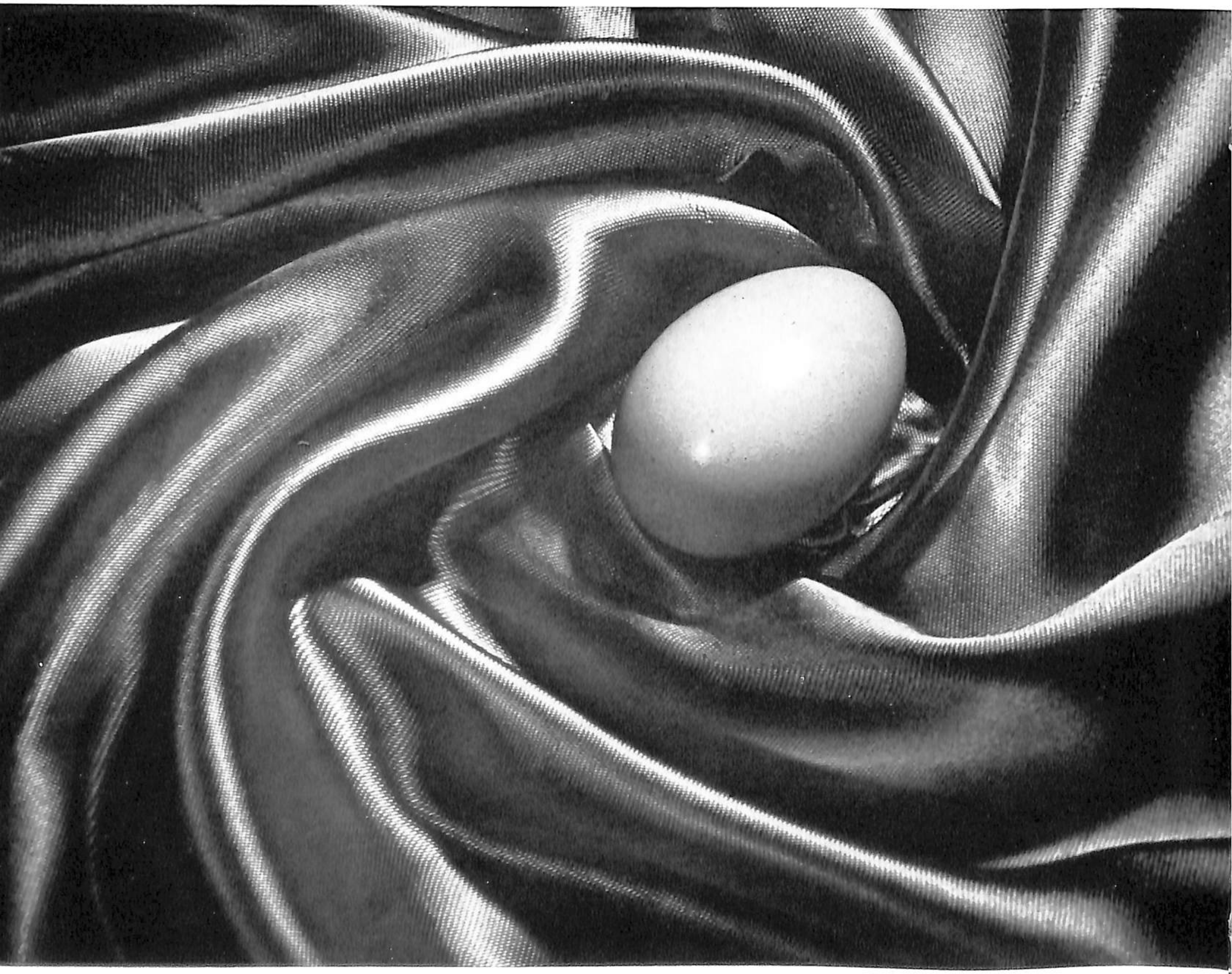


Luxury by Max S. Worthington, Harrisburg, Pa. IIIc, 50mm. Summar f/2 and Focaslide, f/12.5 at 1 second.



Sea Shells by Laslo I. Vanyur, Newark, N. J. IIIc, 50mm. Elmar f/3.5, f/6.3 at 1/100th.

Beachcomber by Siegfried Hartig, Frankfort, Germany. IIIc, 50mm. Elmar f/3.5, f/8 at 1/200th.



Vortex by Max S. Worthington, Harrisburg, Pa. IIIc, 50mm. Summar f/2 and Focaslide, f/12.5 at 1 second.

SIX PHOTOGRAPHERS AND A CAMERA

Editor's Note: By now, the Leica M 3 has been around for more than a year. A great many professionals and outstanding amateurs have been using it actively for various types of photography. We were interested in their reactions to the camera after working with it over a period of time, and we thought you would be, too. So, we asked a half-dozen well-known photographers for their opinions. Here they are.

Fred M. Mazzula

Fred M. Mazzula is a prominent Denver attorney and a regional historian who uses photography extensively in his historical research.

Perhaps you should have directed your question to "the man who owns *one*" instead of to me. I own many, including the single exposure, Model A, Model B, jeweled Model FF250, and a couple of M 3s, together with a couple of Japanese and Russian counterfeits.

Anyone can take a good photograph with any Leica camera. With the M 3 it is just a lot quicker and a lot easier. With the older models it was necessary to go through several physical and mental steps before you were ready to take a perfect picture. Now, you raise the M 3 to your eye, and the transport of the film is almost automatic, the framing of the picture is exact, and the focus is checked as a matter of course, as is the exposure with the ever-present meter. It all adds up to this conclusion: that it is almost impossible to take a bad picture with the Leica M 3.

Henry M. Lester

Henry M. Lester is half of the famous photographic publishing firm of Morgan and Lester and well known as an expert technician.

Photo by Halsman

The most important function of a camera is its ability to make good negatives—or good positives—under any and all conditions.

This, the Leica M 3 accomplishes for me to a degree never before possible without a lot of accessories. As a matter of fact, the ease and simplicity with which I can get excellent pictures with the M 3 is often uncanny: it takes a while to get accustomed to this new freedom. However, once you realize all the advantages that are at your command, and its operation becomes functional, like an extension of your vision and your fingers, you feel that your opportunities to photograph have been expanded beyond the scope of earlier cameras.

The subject and its lighting in relation to the environment can have your undivided attention, and you are sure that what you see through the viewfinder, you will find again later in your photographic image. I guess my overall appraisal of the Leica M 3 can be best expressed by calling it the most *convenient* camera for making excellent pictures. As its most important advantage over earlier Leicas, I would name the new viewfinder and rangefinder system. Not that I do not fully appreciate its other features, or that I would be willing to do without them!

I like to say that "a well-lighted subject is a picture half taken." Now that I am used to taking pictures with the M 3, I would like to change the 0.5 value in that expression to 0.9, even though it would not sound as well.

Everett M. Smith

Everett M. Smith is a staff reporter-photographer for THE CHRISTIAN SCIENCE MONITOR, a lecturer who uses color slides extensively, and a charter member of the National Press Photographers' Association.

During the six months I've owned and used my Leica M 3, I have found it most invaluable in covering any news assignments, particularly those where lighting problems have arisen.

I feel that a really competent newscameraman should never rely wholly on a single type of camera, and, while I purchased my M 3 primarily for color work, I have used it many times with the new triple-speed black-and-white film, with excellent results. And, many of these shots would not have been possible otherwise.

First, the M 3 is nowhere near so conspicuous as the conventional large and bulky news camera. Many people either "mug" the conspicuous camera or they shy sternly away — depending on their individual reactions.

And often the ordinary news camera, with its necessary flash equipment, is not permitted where flash bulbs would be either annoying or absolutely prohibited.

And the almost instant interchangeability of lenses makes the Leica M 3 especially important to a newscameraman. He has practically all the necessary tools for all kinds of shots right at his fingertips.

I have found in my work that for quick, spontaneous candid shots I can work under the poorest of lighting conditions, without flash. Also, when I think of the comparative slowness of my standard news camera, I know that many of the shots now possible with my M 3 would have been lost entirely.

Harrison Forman

Author, photographer, explorer, and lecturer, Harrison Forman has seen excitement the world over through his Leicas' viewfinders.

Back in the good old days if you'd spent 20 years or more in China you were called an Old China Hand. I'm an Old China Hand.

I've used Leicas for more than 20 years, so I guess that makes me an Old Leica Hand.

I am a writer, specializing in the Far Places. There's an old Chinese saying that, "One Seeing Is Worth a Thousand Tellings." Thus, many years ago I decided to become proficient in photography so that I could combine "seeings" with my "tellings."

To get the best possible picture (I couldn't afford to settle for less) I chose the Leica. And, I put it through some pretty severe tests.

I've taken it with me on expeditions deep into the interior of Tibet, Mongolia, Borneo, Malaya, Cambodia, with the Foreign Legion in Indo-China, on the famed Northwest Frontier near the bloody Khyber Pass, and across the historic Hindu Kush Mountains of Afghanistan into the very heart of Central Asia.

I have just returned from a swing through South America on which I took along a new M 3.

It got some pretty rough treatment down there. It was exposed to salt spray, jungle damp, rarefied air while skiing at 17,000 feet above sea level in Bolivia, fast action work while fishing on Lake Titicaca, exposed to bitter winter cold at the southern tip of South America.

It takes a lot of camera to survive all that. My M 3 did — and came through still functioning perfectly.

Morris Gordon

Morris Gordon is a former news photographer now in industrial work as Chief Photographer for the Western Electric Company in New York City.

I have been a long-time Leica user and have pioneered its use in industry. I was well satisfied with the IIIf Leica, and thought that it had attained the zenith of miniature camera construction. And then the M 3 was born. Miracles still do happen!

I can't give an opinion of the M 3 without praising the single focusing and viewing window, and the new lever for cocking the shutter and transporting the film. They are a tremendous boon to the photographer to whom speed of operation is essential. I also appreciate the new-type camera back which drops open to make loading much faster and easier. With the focusing and viewing done in the same window, it is now possible for me to continuously focus an object moving toward the camera until the very instant of exposure. The M 3 viewer also corrects parallax error for any lens automatically — another big help. Lens changing takes only a flick of the wrist; and a new frame finder appears on the viewing window with each change of lens. These improvements make me consider the M 3 the finest, and fastest-operating miniature on the market.

Another important change, to the professional photographer, is the size of the camera, which is slightly larger than previous models and so fits more cozily into the hand.

My happy experience with the M 3 has prompted me to change my other two Leicas to M 3s, with their full complement of lenses.

Helen C. Manzer

Helen C. Manzer, F.P.S.A., A.R.P.S., teaches photography and is one of the country's leading color slide exhibitors.

I have always enjoyed the versatility and flexibility of my Leicas, but I find that these rise to new heights in the M 3. It has so many automatic features that I am quite free to concentrate on my picture without needless absorption in the details of mechanical operation.

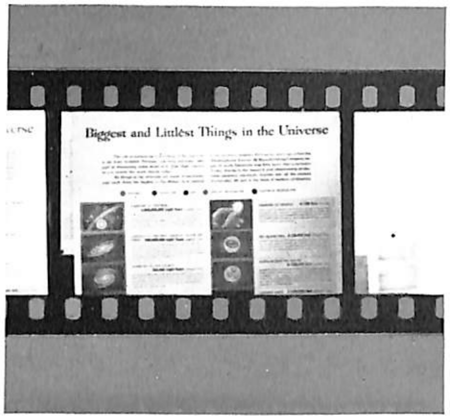
With rangefinder and viewfinder combined in one window, I can arrange and focus my pictures with great ease and at practically the same time. I also welcome the large clear image. The bright-line frames in the field of view which define the areas covered by the 50mm., 90mm., and 135mm. lenses seem to provide a remarkable combination of precision and flexibility. And I have used to great advantage the field area visible in the viewfinder beyond that shown by the bright-line frames. The images of moving objects in this marginal area help me to anticipate them before they actually enter the field covered by the lens.

And how gratifying it is to find on the film exactly the picture I composed in the viewfinder! The automatic parallax compensation of the M 3 puts my mind at rest on this point. Speed with which I can change bayonet-mounted lenses also permits me to vary the picture area without delay as the need arises. Other features of the M 3 I especially enjoy are the automatic synchronizing of the flash unit, the smoothness of the lever film advance which advances each frame and cocks the shutter, and the automatic resetting of the exposure counter. It's nice to use a camera that keeps track of details for you!

ADOX KB-14
NEW APPROACH TO FILM RESOLUTION

What Will It Do For Your Black-And-Whites?

Charles I. Hellman | Yonkers, N. Y.



Have you ever tried making a really big blow-up from one of your Leica negatives? If you haven't, a real thrill is waiting for you. Or, perhaps you've tried and found that after some enlargement you could get no more detail from further blow-up.

If you have examined the situation further, you may have refined your techniques to try to squeeze more detail out of your Leica negatives. Your Leica and its accessories are made to extremely close tolerances, so the limitations of enlargement have doubtless been due to the limited resolution of the negative emulsions available up to now. But, the Schleussner Company of Frankfort, Germany, has developed three new 35mm. films which free you from former resolution limitations. These Adox films (now also available in 120 size—Ed.) are formulated with one key objective: to provide the 35mm. photographer with film that has a resolving capacity which does justice to fine photographic lenses and permits giant enlargements without loss of detail.

The three Adox films are:

KB-14: Daylight Exposure Index 16
Tungsten Exposure Index 12
Resolution 140 lines per mm.
KB-17: Daylight Exposure Index 32
Tungsten Exposure Index 25
Resolution 110 lines per mm.
KB-21: Daylight Exposure Index 80
Tungsten Exposure Index 64
Resolution 90 lines per mm.
(For meters calibrated for A.S.A. indexes.)

Revolution In Resolution

KB-14 film is outstanding in its ability to record fine detail. Its characteristics put it in a separate class from the other two films. So we will limit this article to this particular film. KB-17 and KB-21 films will be fully discussed in a later issue.

The Winter 1954 Issue of LEICA PHOTOGRAPHY (Adox — A Better Film By Definition) showed how thin-emulsion films give high resolution, reducing the light spread of image points. And there are other advantages to thin emulsions. Processing solutions penetrate the emulsion quickly, reducing developing and fixing times. Washing is also speeded up. You will particularly appreciate the short drying time. After removing surface water, I have found KB-14 soon dry enough for enlarging—and without the benefit of artificial drying methods.

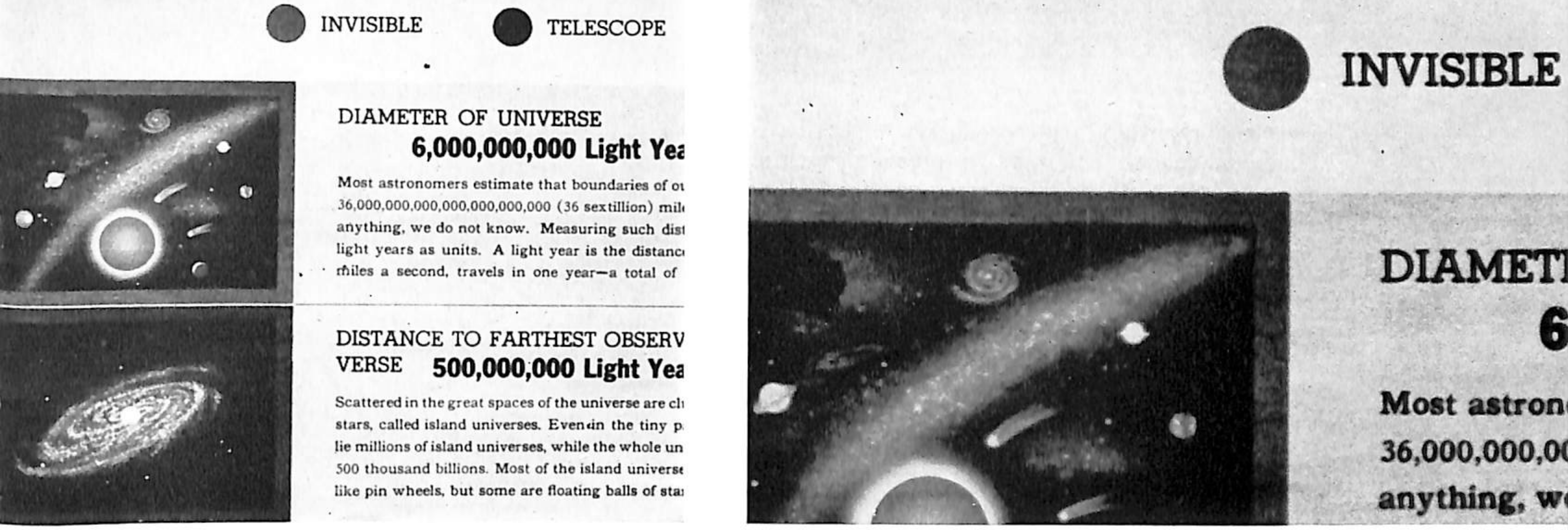
Has Built-in Fine Grain

Ordinary negative films when developed have a great range of grain sizes. "Fine grain" development is necessary with these films when lack of graininess (grain clumping) is important.

But in KB-14 the grain sizes are remarkably uniform and fine. Result: it is practically impossible with any developer to produce a grainy print from this film. Thus we are freed from a basic drawback of fine-grain developers—loss of emulsion speed. With KB-14, you can pick a film developer that will produce the maximum emulsion speed while maintaining useful negative contrast and image resolution and forget about graininess.

How Does KB-14 Improve Negative Sharpness?

There has been considerable misunderstanding as to what governs sharpness of detail in negatives. You often see a statement that if a lens produces an image in its focal plane of, say, 50 lines per mm., then you need not use a film of higher resolution than 50 lines per mm. It is assumed that if the resolution of the lens and the film are the same, then the photographic negative will resolve 50 lines per mm.



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THE HIGH RESOLUTION of KB-14 is particularly useful in copying. This film is excellent when copies are needed of subjects containing fine detail and halftones. Microfilming emulsions have been available for high contrast line-work but not for halftones. Note how well the halftones of the drawings have been retained. D-76 developer is appropriate for copy negatives as it produces the higher contrast needed. The 50mm. Elmar f/3.5 lens was used at f/11—½ second. Developed in D-76 for 6 minutes at 68°F.

But It Isn't So!

Actually, careful workers have found that the final resolution in the negative is lower than the resolution of the lens or film. The key to improved negative sharpness with a given lens is to use a film of the highest possible resolution. Thus, if a lens of 50 lines per mm. resolution were imaged on KB-14 (with its inherent resolution of 140 lines per mm.), then the final negative resolution will be very close to the optical resolution of the lens. The problem of negative sharpness is further complicated by the fact that there are different ways of measuring resolution. Furthermore, there are some doubts as to the correlation between certain film resolution figures that have been published and the sharpness of the negatives that can be made on these films. But, regardless of what our criteria of sharpness are, the final test of a film lies in the sharpness of enlarged prints that you can make from it. Examine our illustrations. Better yet, use some KB-14 on subjects that will demand the utmost in resolution. We are sure that it will meet your most exacting demands.

How Is KB-14 Used?

The KB-14 exposure indexes are conservative. Actually, I have found that a daylight index setting of 25 produces ideal negatives for enlargement. As a matter of fact, you get *maximum* resolution in films with *minimum* correct exposure. If you use the development we recommend here, I suggest, as a start, that you use 25 as the index setting.

After you have exposed your first roll of KB-14, you may want to use a higher or lower film exposure index to suit your personal preference in negatives.

As a guide to the speed of KB-14, I have found that during the bright hours of daylight, clear sun, my average exposure has been between f/5.6 to f/8 at 1/100th. This represents a very useful exposure level.

How To Get Maximum Optical Detail In Your Negatives

You will get maximum optical detail in your negatives by observing the following:

(1) Focus carefully. This is just simple routine with cameras with precision rangefinders.

(2) Keep motion of the image upon the film to a minimum. Do it by using a short enough exposure speed to stop the motion, and by holding the camera steady during the exposure. Naturally, motion of either the subject or the camera will blur the image. Occasionally there is camera motion during exposure which degrades negative sharpness. Hand-held exposures at 1/100th of a second are usually adequate. In critical cases, use a tripod.

(3) Overexposure causes the light forming fine image details to spread in the emulsion, reducing sharpness. Correct minimum exposure is essential to maintain maximum sharpness.

Which Developer To Use

Since KB-14 is practically grainless with any developer, two other considerations should guide you in the choice of developer. Since the film has medium speed, the developer should maintain the highest possible emulsion speed. And since KB-14 has inherently high contrast, borax-type developers (normally recommended for highest emulsion speed at normal contrast) are not suitable. But these developers will prove useful for subjects that are very flat and for copying.

Fine-grain developers are unsuitable for KB-14 since they produce a loss of emulsion speed. And what's worse, they often produce a reduction in image sharpness. This may be due to an etching away of the surface image (where the highest resolution is formed) or the spreading of the image points in the emulsion.

I quickly found that soft-working borax-type developers produced far too contrasty negatives. However, a formula developed by Willi Beutler, a German photographer, looked promising and has since fulfilled all my expectations. The Beutler formula, a "compensating"-type developer, brings out shadow detail in the film yet holds high resolution. KB-14 developed in this formula has considerable latitude.

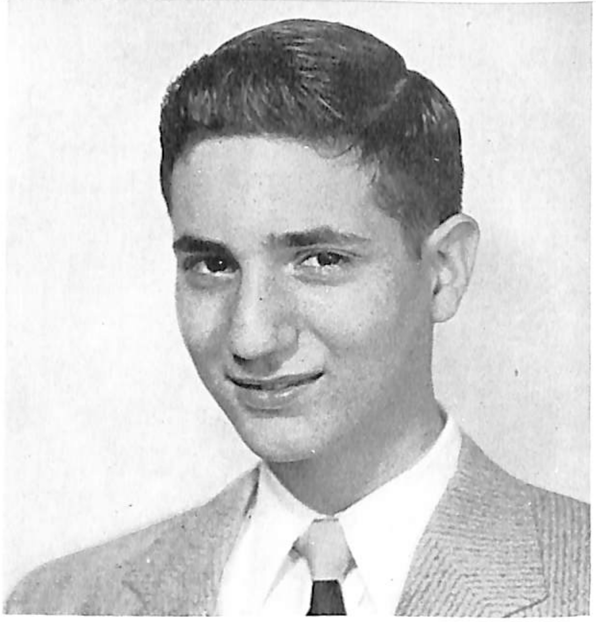
Preparing The Beutler Developer

SOLUTION A	
Hot water	500 cc.
Metol	5 gm.
Sodium Sulphite (anhydr.)	25 gm.

SOLUTION B	
Hot Water	500 cc.
Sodium Carbonate (Monohydr.)	29 gm.

One tip I might add is to *first* add just a pinch of sulphite to the water when mixing Solution A. This helps minimize possible oxidation of the metol which you should dissolve fully before adding the rest of the sulphite.

To Use: Allow solutions A and B to cool to room temperature. Add 50 cc. of *each* solution to 500 cc. of water at 65°F. Develop 7 minutes at 65°F. for normal gamma. Agitate about 30 seconds for each minute of development time. This developer will give you an effective exposure index of 25 to 32. Stored separately in stoppered bottles, the stock solutions will keep for several months. However, you should discard the diluted developer after each use.



THIS PORTRAIT was taken under two photofloods with the Summicron at f/2.8—1/50th second. The speed of the film is adequate for photoflood work indoors. The Summicron has superb definition even at f/2.8, resulting in a negative of remarkable detail.

If you use a short-stop bath, keep it weak—about three or four drops of 28% acetic acid to 10 ounces of water at 65°F. Fixing and washing are the same as with other films.

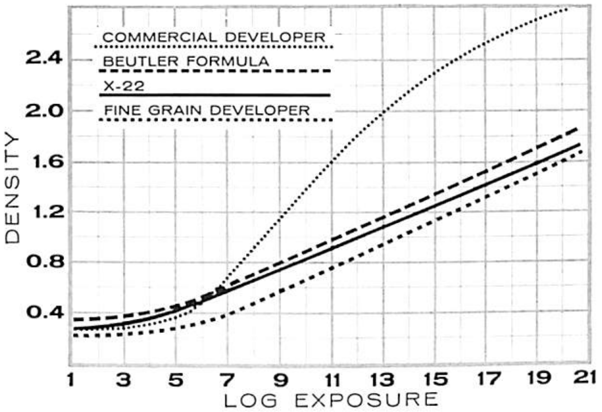
Drying

After washing, dip film for a minute in a wetting agent, such as Photoflo. Then, grasping the film at either end, snap off excess water and hang up in a dust-free room. This procedure eliminates all chance of scratching the wet emulsion.

A vast amount of detailed research by German photographers has led to the formulation of several developers which are eminently suitable for KB-14. Neodyn, a proprietary formula, is excellent where high subject contrast must be controlled in the negative.

AN 8 x 10 PRINT of this commercial type photo is almost the equal of a contact print from a large negative. The Summicron was used at f/8—1/100th second. This opening is within the best operating aperture range and shows the advantage of medium speed film. Faster film often requires smaller apertures, actually reducing the optical resolution of the lens. Development in Beutler formula.

LANDSCAPES challenge negative resolution, as distant details tend to merge in the negative and defy attempts to get them on the enlarging paper. Here the combination of KB-14 and the optical properties of the wide angle Summaron have combined to permit enlargement of 25 diameters with excellent sharpness. The Summaron was used at f/8—1/100th second. Beutler developer was used for 7 minutes at 68°F. Note how highlights of the white stone were retained together with good shadow detail.



AN UNUSUALLY interesting set of graphs shows the great advantage of the Beutler and X-22 developers in maintaining high shadow contrast while the straight line portions of the graphs are of low gamma. The commercial developer, of high-energy soft-working type, shows a low shadow detail while the higher densities would be unprintable. The fine grain developer, about equal in gamma to the Beutler developer, shows loss of shadow detail. Coordinates of this chart are accurate; scale has been altered.

New U. S. Packaged Developer

In this country The FR Corporation has also formulated a suitable developer for KB-14. I have been using experimental samples of their X-22 developer (see p. 10—Ed.) and it is very promising.

It is easy enough to compound a developer that will produce appreciable density in the highlights even with underexposure. The *real* problem is to make a developer that will give shadow detail without excessive highlight detail. Effective increase in film speed is clearly shown by the Beutler and X-22 developers since the shadow portions of the characteristic curves show an appreciable gradient. Note also that the middle and highlight regions are long straight lines. This makes for excellent negative quality. The X-22 developer is excellent with KB-14 for electronic flash exposures.

How To Use X-22

Dilute 1:19.

I used it by adding 15 cc. of the stock solution to 285 cc. water at *70°F*. Developing time in minutes at 70°F.

Gamma	*Time*	
0.5	9	Suitable for high contrast subjects.
0.6	11	Use for average contrast subjects.
0.7	13	For low contrast subjects and electronic flash.

Agitate 10 seconds each minute during development.

The other processing steps are much the same as with any developer.

KB-14 With Electronic Flash

KB-14 is an extra-good choice for close-up and medium distance work with miniature cameras and electronic flash. At these distances fast film is a liability since you must close down the lens all the way; even then you may get overexposure. With the Beutler developer or X-22, a guide number of 60 gave me well-exposed negatives with a 75 watt-second electronic flash. This is a desirable level, since at 10 ft. the aperture is f/6, at five ft., f/12—within the lenses' range of best definition.

Your Own Technique

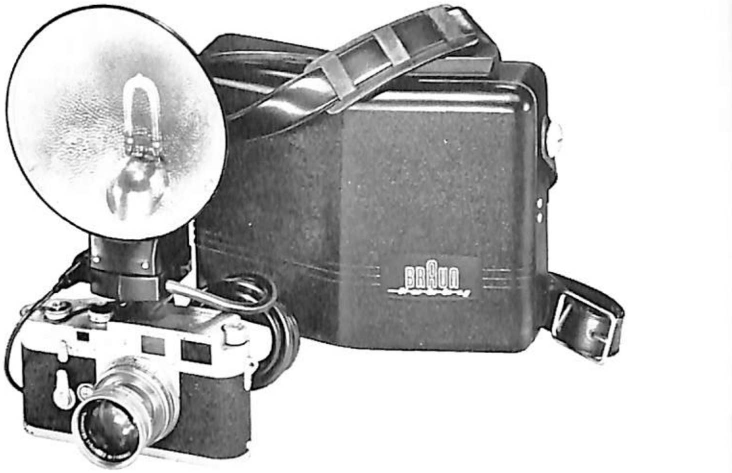
KB-14 offers the serious 35mm. worker significant aid in achieving better results. However, as with all new tools, you will want to experiment with KB-14 to determine the operating conditions that best fit your own particular needs, enlarging technique, etc. Do not hesitate to adjust time of development or exposure index setting to produce the kind of negative you prefer.

THIS INSTRUMENT was part of a wall display. The existing lighting was uneven and poor. My first thought was to get the tripod and photofloods. However, electronic flash was handy and it was quickly coupled to the Leica. The 50mm. Elmar was used at f/16. Development in FR X-22 at 70°F. was 11 minutes. This combination of high resolution KB-14, Elmar lens, and electronic flash extends the possibilities of the Leica to fields demanding very high resolution.

THE WIDE ANGLE SUMMARON made possible photographing the building entrance without going excessively far back. The aperture was f/6.3 and the exposure 1/100th second. The Summaron operates particularly well at f/6.3 and the medium speed film was just about right to permit this aperture with the shutter speed preferred. Developed in FR X-22 for 11 minutes at 70°F. Dilution, 1:19.

Ed. Note: The Braun Hobby, Europe's most popular electronic flash unit, is made by the firm of Max Braun, a leading German producer of a wide range of electrical products.

MEET THE BRAUN HOBBY ELECTRONIC FLASH



Unit Has Unique Features

Bob Schwalberg | New York, N.Y.

Time was when using electronic flash called for a professional's bankroll, a healthy assistant's back, and a wizard's brain. But progress in electronics has greatly altered this situation; today's camera stores are bursting with reliable portable units well within the average amateur's means, to say nothing of his lifting and carrying capabilities. New units of every size, shape and description are constantly popping up on your dealer's shelves.

One of the very latest and most modern of the portables is the Braun Hobby "100" made in Frankfort, Germany, and distributed in the United States by E. Leitz, Inc., New York. It first appeared in this country via the barracks bags of returning GIs, and has won widespread respect as one of the finest and most versatile units ever offered. To understand why amateurs and professionals both praise the Hobby, let's run through its outstanding features.

Three-Way Power Sources

The Braun Hobby can be operated completely independently of external power sources with an American-made 510 volt Eveready #497 dry cell. For those who prefer not to buy expendable batteries, there is a rechargeable wet-cell unit requiring a minimum of maintenance. And, if you're shooting indoors where A.C. lines are available, you can plug in and shoot away!

Unique Focusing Reflector

Probably the outstanding innovation of the Hobby is its original (and soon-to-be-widely-imitated) focusing flash head. When the head is in its normal position the hairpin flash tube sits well back within the reflector, projecting a 50° beam. This matches the field of view of the various standard focal lengths supplied with cameras of all types. For example, a standard 50mm. lens, like the Leitz Summicron, covers a field of 45° across the diagonal of the 24 x 36mm. Leica negative. But what about a wide-angle lens such as the 35mm. Summaron which covers 64°? The answer is simple: Loosen one set-screw, slip out the metal bracket, twist the flash tube completely around inside the reflector, reinsert the bracket and set-screw. The flash tube is now seated about an inch in front of its original position and you've got a 70° flash beam!

Size And Weight

With the Eveready dry cell in place, the Hobby's hip-hugging plastic power-pack weighs just a shade more than four pounds. The eight ounce flash head, which clips onto the side of the power-pack for easier portability, brings the total weight up to four and one-half pounds. Substitution of the combined wet cell and A.C. power-pack adds only 17 ounces. The case itself (8¾" x 7½" x 2½") is an especially tough polyamid plastic that is practically unbreakable. In any event, at a recent convention we saw an enthusiastic Leitz representative draw gasps from a crowd when he threw one to the floor and retrieved it unmarred.

Light Output

Too often photographers rely solely on watt-second input as a measure of a speedlight's potential. But such factors as flash duration and reflector efficiency also enter the picture. What's more, many units are guilty of the sin of "hot-spotting." They give their rated power over only a fairly small central portion of the negative and leave the corners dark. But with either its standard 50° beam or its 70° wide-angle beam, the Hobby does *not* hot-spot. For the record, the electrical power input at the Hobby's flash head is somewhere between 100 and 110 watt-seconds. This puts the little unit definitely in the professional power input bracket. Most of the other units with this

TWO FLASH HEADS. Direct flash plus extension head "bounced" off the ceiling give natural effect yet stop movement. M 3, 35mm. Summaron at f/8; KB-17 in X-22.

power input that I've handled weigh from three to six pounds more, which means a very favorable weight-to-power ratio for the Hobby.

The flash duration as measured from half-peak to half-peak is slightly more than 1/1000th of a second. This is a characteristic which the Hobby shares with most other modern portable speedlights which operate (at least part of the time) off dry batteries. And it is an important fact, because when flash duration is very much *less* than 1/1000th of a second, we encounter a problem masquerading as "high-speed failure of the reciprocity law." This means that with *both* black-and-white and color films, four flashes lasting 1/4000th of a second (for example) will not produce as dense a negative as one single blast lasting 1/1000th of a second. With all of these technical considerations, you can see that watt-second input is far from a reliable guide to photographic potency. Instead, photographers have learned to rely upon a very simple criterion: the guide number obtainable for daylight Kodachrome. More about this later.

Using The Three Power Supplies

The first question you must answer for yourself is whether you want to use the Hobby with the dry cell pack, the wet cell unit or directly off A.C. lines—or all three. Each of these three power sources has its own advantages and disadvantages.

The dry cell offers two important advantages: short recycle time between sucessive flashes and the ability to make a great many flashes in a very short period of time. The recycle time between flashes when the 510 volt dry cell is used is only six seconds. This is the time it takes the unit to bring the condensers from no charge to full charge. One dry cell is good for at least 750 flashes. But with proper discretion, you can extend this to a little short of 1,000 flashes. The important thing to remember in using a dry cell is to give the battery a rest at least equal to each period of use. One of my tests of the Hobby was to make a good many consecutive flashes at six second intervals until the charge light on the flash head failed to glow. At this point I put the dry cell aside for 12 hours, then replaced it in the power-pack. It worked perfectly. In normal use it is possible to take approximately 200 flashes within a period of say two or three hours without materially harming the battery. However, after this number of flashes it is imperative that you let the dry cell relax and rejuvenate itself for at least a full day. Professionals who must take many consecutive flashes in shooting picture-stories should get two dry cells which can be interchanged at convenient times to prevent overworking either cell. One dry cell ($15.95) will, with normal intermittent use, bring your cost to a maximum of about two cents per flash. The longevity of the battery can be greatly extended (and the cost per flash further reduced) by utilizing the wet cell and A.C. power-packs whenever practical.

The Hobby's wet cell is an extremely efficient design requiring a minimum of maintenance. The important thing is to keep the cell properly charged, and to recharge immediately after the indicator balls drop below the safety mark. One full charge on A.C. requires about 12 hours and is good for roughly 80 flashes. The recycle time between flashes with the wet cell unit is about 10 seconds. The prime advantage of wet cell operation is portability with no cost per flash.

The third source of power for the Braun Hobby is any A.C. power line. If you do considerable traveling, you will appreciate that the Hobby provides for 110, 125, 160, and 225 volt A.C. operation. Incidentally, operating off A.C. is exactly the same as recharging the wet cell unit. This means you can recharge your unit off any one of these types of A.C., 60 cycle current, and (when operating off A.C.) always know that you have a reserve for portable operation of some 80 shots in the wet cell. A.C. line operation requires a recycling time between flashes of about 12 seconds—the Hobby's longest recycle figure. Although you are tied to a power outlet, A.C. operation of the Hobby is a valuable advantage if you use dry batteries as well as the wet cell unit. To the dry cell man it means the ability to rest his battery whenever A.C. is convenient; to the wet cell man it means the ability to continue shooting while recharging his wet cell.

Making Pictures With The Hobby

Whatever film you use with your Hobby, the first thing to discover is the guide number. Keep in mind that electronic flash synchronization, so-called "X" or "zero delay" synch, is actually nothing more than open flash. You press the shutter release, the shutter opens completely, the flash tube discharges and the shutter closes. Focal-plane shutters permit synchronization of speedlights at shutter speeds up to and including 1/50th second, depending upon the make and model of the camera. However, since the duration of the flash is very much shorter than the fastest speeds at which we can synchronize, the shutter speed has no effect on the exposure. This must, therefore, be controlled by means of the lens diaphragm. In general, it is the best technique to synch your speedlight pictures at the highest shutter speed permissible with focal-plane shutters and the nearest speed to 1/100th of a second with between-the-lens shutters which sometimes fail to operate efficiently at the higher 1/250th and 1/500th speeds.

To determine the correct f/stop by means of the guide number, you merely divide this guide number by the shooting distance. Here are some guide numbers which we have determined experimentally:

Guide Numbers for Braun Hobby Tested with Dry Cell Battery Unit. Reflector set for 50° beam. With 70° beam give one stop extra.

Film	**Approx. Guide No.**	**Processing**	
Kodachrome Daylight type	50 to 56	By Eastman Kodak only	
Anscochrome Daylight type	70 to 80	Processed for standard ASA 32 exposure	
Ektachrome Daylight type	70 to 80	Processed for standard ASA 32 exposure	
Kodak Tri-X 35mm. & 120	250 to 320	12 min. D-76 and Promicrol 13 min. D-23	
Kodak Super XX 35mm. & 120	160 to 220	Same as above plus 13 min. Microdol	
Kodak Plus-X 35mm.	160 to 220	12 min. Promicrol, 13 min. D-23 and Microdol	
Ansco Supreme 35mm. & 120	160 to 220	Same as above	
Adox KB-21	160 to 220	Same as above	No D-23 Used
Adox KB-17	110 to 160	Same as above	
Adox KB-14	80 to 110	Same as above	

The first thing to note is that the color guide numbers are for use with the daylight emulsions. The light output of the Braun Hobby has a rated color temperature of 5,600 degrees Kelvin, which is about equal to that of average noon daylight. For this reason no filter is necessary for use with these color films.

All of these guide numbers were determined on the basis of tests made outdoors at night. Tests made indoors will undoubtedly yield significantly higher guide numbers. The black-and-white developments indicated are not necessarily ideal for any of the films listed. Speedlight negatives tend to be somewhat flat, and we must develop as much for contrast as for density in processing electronic flash negatives.

To arrive at your own guide numbers, arrange a typical subject at several known distances and have the subject hold cards showing the lens apertures at which you're shooting as you make a sweep down the entire diaphragm. An even-colored flat wall behind the subject will be useful for detecting any fall-off in the corners of the negative.

My guide number tests were all made with the Hobby's flash head adjusted to give the standard 50° beam. When using the 70° wide-angle tube position, it is necessary to open the diaphragm one full stop. In general, for direct flash photography, all of the black-and-white guide numbers are very high and compare favorably with those of competitive units giving similar watt-second input.

One Reporter's Conclusions

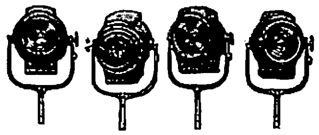
In testing the Braun Hobby "100" over a period of some six weeks, this reporter broke a good many of the rules and subjected his test sample to considerable abuse. Despite this the unit did not once fail to fire except when over 100 consecutive flashes were made with a dry cell, at six second intervals. The light output exceeds that of other units of like size and weight and compares very favorably with that of heavier units with similar electrical characteristics. Absolutely no hot-spotting was detected with either the 50° or the 70° beam settings. The 70° wide-angle beam was found to cover the field of a 28mm. wide-angle lens despite the fact that this focal length covers a 75° field on a 24 x 36mm. negative. Apparently the 2½° of extra coverage on either side of the 70° beam did not matter. The Hobby functions particularly well with the dry battery. Even when the battery was run down to the point where a nine second interval was required for full recycle, the unit delivered guide numbers equal to those obtainable from fresh batteries. The Hobby does not, apparently, need to be polarized as it operated perfectly even when contacts were reversed.

The light-output-to-weight ratio is extremely favorable. The cost of operation with dry batteries is on a par with units of similar weight and power but higher than other 100 watt-second units weighing considerably more. This cost, however, is drastically reduced by part-time use of the Hobby's wet cell and A.C. power-packs.

The Hobby is light, strong, dependable. Its light output is more than adequate for most photographic assignments. The variable beam flash head greatly extends the unit's versatility and dependability. It is particularly well engineered, and its component power-packs are easily interchangeable.

It is a pleasure to use and should find wide support among amateur and working photographers.

SIDE LEITZ



Meet Your Fellow Leica Users

In our Spring Issue we spoke of the Questionnaire which 15,000 of you received, and the replies which more than 8,000 of you gave us. We wanted to find out more about Leica owners: What are your interests? How regularly do you use your camera? What accessories do you use? What do you want to see in LEICA PHOTOGRAPHY? And so on. The information received has been very interesting to us. With it, we hope to be able to increase your enjoyment of LEICA PHOTOGRAPHY and the fine equipment you own.

Your answers show clearly that there is no such thing as an "average Leica owner" expressed in terms of age, occupation, income, or any of the other criteria so often used to define an "average man."

The thing which you Leica owners *do* have in common is your enjoyment in taking good pictures and your interest in mastering the various types of photography possible with your Leica. As to the type of articles you prefer, 79% mentioned Techniques, 54% Leica Equipment, and 38% Photo Theory, with Pictorial, Salon Section, and all other classifications being mentioned by 36%, 25% and 29% respectively. Rest assured we will heed this "mandate."

Not only are Leica owners interested in photography, but they are busy practicing it. Some 30% of you had used your cameras within a week and 74% of you within a month of the date of the Questionnaire. And, of course, you used a lot of film. Most of you (63%) use both black-and-white and color. Of the balance, 30% use color only and 6% black-and-white only (1% of you didn't answer).

Some 32% of you use one roll of color, 19% two rolls, and 14% three or more rolls per month. In the case of black-and-white, 24% use one roll, 15% two rolls, 13% three or more, with about 18% using bulk film. Since these questions were answered by the same people, you must add the figures to get an idea of the total film consumption per owner, indicating average consumption. About 22% of you did not say how many rolls of film you use per month. That 18% of you use black-and-white bulk film is interesting, as is the fact that 48% of you do your own darkroom work.

And, we have many other interesting facts about your fellow Leica owners: For instance, 13% are under 30 years, 11% over 60 years, with a median age of approximately 43 years. But, when you think about this median age, remember that over 10% of the owners bought their first Leica more than 20 years ago and that 20% acquired their first Leica between 1936 and 1944. You can see that the average median age of the owners at the time they bought a Leica was somewhere in the 30s.

And what do you do when not taking pictures? The biggest group of Leica owners is professional men—with engineers and architects leading, doctors second, and teachers and research workers third. About 17% of you do "white collar" work, while 13% are business proprietors or executives; 9% do skilled or unskilled labor. Professional photographers represent a healthy 3%. As you might suspect from the foregoing, over 90% of registered Leica owners are men.

The economic brackets of Leica owners vary considerably with the age groups. Based upon those of you who bought your first Leica 20 years ago or more, we would have a veritable Who's Who, with about one-third of those answering reporting incomes of more than $15,000. Those who acquired their first Leica during the last five years are, naturally, younger and have not yet reached full earning power, almost 25% reporting income below $5,000 a year, with the percentage represented in the higher income brackets only about half of the group who bought their Leicas 20 years ago.

In the next issue we will tell you more about the type of equipment and accessories Leica owners use, along with other aspects of the survey which we believe will interest you.

Again, thanks to all of you who made this survey possible.

P.S.A. Convention. After the hot summer is over, you may enjoy the combination of brisk New England autumn weather and a photographic get-together offered by the National Convention of the Photographic Society of America. The place is Boston. The dates are October 6, 7, and 8. You can get other details from The Photographic Society of America, 2005 Walnut Street, Philadelphia 3, Pa.

National Geographic Print Show. If you're going to be in Washington, D. C., don't fail to visit the color print exhibit at National Geographic Society headquarters. Some 150 dye transfer color prints, from 8" x 10" to 16" x 20" in size, will be on exhibit there in Explorers' Hall. Admission is free, and the exhibit is open from 9:00 a.m. to 4:30 p.m. Monday through Friday at least through the end of this year. A great majority of the prints are from 35mm. Kodachromes.

Please Excuse. In our Spring Issue on page 4, a picture of a machinist was listed as having been taken with a Summaron at f/2. Naturally, a number of you asked where you can get this high-speed Summaron. Sorry, but you can't! That "f/2" was just a typographical error. Should have read "f/8." The lens was a standard f/3.5 model.

Leica Lecture Series. Walther Benser, famous German Leica specialist, will begin a nationwide lecture and demonstration tour that will put him in your area sometime during his four-months' travels in this country. Admission to the lectures will be by ticket, available from your Franchised Leica Dealer at a later date. Mr. Benser's appearances will feature his work in black-and-white and color, and he will demonstrate expert techniques of handling the Leica. His first appearance will be at the Abraham Lincoln Hotel in Reading, Pa., on Sept. 21. Look for more details, including Mr. Benser's itinerary, in our Fall Issue.

Wrong Neck Strap. Be sure that the neck strap you are using on your M 3 was designed for it. Some Leica owners, using a IIIf neck strap with their M 3s have reported scratches on the camera body which resulted from the differences in design of the neck strap eyelets and hooks on the two models of camera and strap.

Good Year. Since editors, just like people, appreciate a back-pat now and again, we're happy to say that LEICA PHOTOGRAPHY has recently received a couple. From the 13th Exhibition of Printing of the New York Employing Printers Association, Inc., we received a Special Merit Award, and the International Council of Industrial Editors evaluation of industrial publications scored us at 91 points out of a top score of 99.

Naturally, any credit which comes to LEICA PHOTOGRAPHY also belongs to the artists and printers who design and produce it. Most of all, it belongs to you who submit the photographs and articles that go into the magazine. To them and to you, our thanks!

Filter Fun. Although Norman Rothschild didn't mention this specifically in his article, you can have a lot of fun using regular green, red, yellow, etc., filters with color film. He, himself, has made some remarkable pictures this way. Naturally, you distort color values when you do this, and you should be working toward some definite mood or effect in your picture when you try it. But with a little experimenting, you can come up with something that will call forth "ohs" and "ahs" from your audience next time you have a slide show.

Inner Circle. Close to three-quarters of a million of us in this country own Leicas, but the man who knows how to pronounce all the Leica trade names really has *arrived!* So that you can check on whether *you* have arrived, and to help you get there if you haven't, here's a list of current Leica lens names with their correct pronunciations. If there are any others you've been wondering about, let us know.

SUMMARON	(soom'uh ron)	SUMMAREX	(soom' uh rex)
ELMAR	(ell' mar)	HEKTOR	(heck' tore)
SUMMICRON	(soom' ih cron)	TELYT	(tell' eat)
SUMMITAR	(soom' ih tar)	STEMAR	(stee' mar)

Vacation Tip. A new eyepiece (Cat. No. 11,085) converts your 50mm. or 90mm. screw-mounting lens into a 3.5X or 6X telescope for only $4.80.

Hold It, Please!

"The camera has double exposure prevention, automatic parallax compensation, coupled exposure meter, automatic exposure counter, rapid film advance and a film-speed indicator — *but I forgot to take off the lens cap.*"

Poof! by Eugene C. Anderegg, Ridgewood, N. J. Leica M 3, 50mm. Summicron f/2; f/4 at 1/250th, Adox KB-17, 9 minutes in X-22.

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